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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,574	09/23/2003	Mayuko Okada	501152.20022	3046

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EXAMINER	
SHOSHO, CALLIE E	

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/668,574	OKADA ET AL.	
	Examiner	Art Unit	
	Callie E. Shosho	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/23/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 and claim 8 each recite "self-dispersing type carbon black". The scope of the claim is confusing because it is not clear what is meant by "type" or what carbon blacks are encompassed by this phrase. The addition of the word "type" extends the scope of the claims so as to render them indefinite since it is unclear what "type" is intended to convey. The addition of the word "type" to the otherwise definite expression renders the definite expression indefinite by extending its scope. *Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3-7, and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujioka (U.S. 5,667,569).

Fujioka discloses ink jet ink comprising water, carbon black, 5-15% glycol ether such as tripropylene glycol monobutyl ether and dipropylene glycol monopropyl ether, and 1-20% acrylic polymer. It is calculated that the ratio of glycol ether to acrylic polymer is 0.25 (5/20) to 15 (15/1) (col.1, lines 9-15, col.1, line 56-col.2, line 5, col.2, lines 45-46, col.3, lines 15-16, 31-32, and 42-45, and col.4, lines 14-15, 23, 38-40, and 53-59). Although there is no explicit disclosure of ink cartridge containing the ink, Fujioka et al. disclose that the ink is printed onto substrate from ink jet printer which would inherently possess ink cartridge to store the ink.

In light of the above, it is clear that Fujioka et al. anticipate the present claims.

5. Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Koga et al. (U.S. 2003/0073759).

Koga et al. disclose ink jet ink comprising water, pigment such as carbon black, 0.01-20% acrylic polymer, and 2-15% glycol ethers including dipropylene glycol n-propyl ether and tripropylene glycol n-butyl ether. It is disclosed that the pigment is surface treated, i.e. self-dispersing. It is calculated that the ratio of glycol ether to acrylic polymer is, for instance, 0.75 (15/20) (paragraphs 1, 4, 13-15, 20-21, 24, 26, 28 (line 8), 30, 33, 42(line 6), 43(line 6), and 50). Although there is no explicit disclosure of ink cartridge containing the ink, Koga et al. disclose that the ink is printed onto substrate from ink jet printer which would inherently possess ink

cartridge to store the ink.

In light of the above, it is clear that Koga et al. anticipate the present claims.

6. Claims 7-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato (U.S. 6,440,203).

Kato discloses ink jet ink comprising water, 0.1-10% self-dispersing carbon black, acrylic resin which is a dispersant for a second colorant present in the ink, and 1-20% solvent such as dipropylene glycol mono-n-propyl ether. Given that the ratio of self-dispersing carbon black to second colorant is 1:1 to 3:1 and given that the acrylic resin is present in amount of 10-120% of second colorant, it is calculated that the acrylic resin is present in amount of 0.003-12%. The ratio of dipropylene glycol mono-n-propyl ether to acrylic resin is, for instance, 1.67 (20/12) (col.1, lines 9-10, col.2, lines 33-35 and 40-41, col.3, lines 55-58, col.4, lines 43-48, col.5, line 3, col.7, lines 42-46, col.8, lines 2-3 and 6-8, and col.14, lines 3-9). Although there is no explicit disclosure of ink cartridge containing the ink, Kato et al. disclose that the ink is printed onto substrate from ink jet printer which would inherently possess ink cartridge to store the ink.

In light of the above, it is clear that Kato anticipates the present claims.

7. Claims 7 and 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Segawa et al. (U.S. 2004/0024086).

Segawa et al. disclose ink jet ink comprising water, 0.1-20% pigment, 1-20% glycol ether such as dipropylene glycol mono-n-propyl ether, and acrylic polymer dispersant. From the examples, it is calculated that the acrylic polymer is present in amount of, for instance, 0.63%. It

is calculated that the ratio of dipropylene glycol mono-n-propyl ether to acrylic polymer is approximately 1.6 (1/0.63) to 33 (20/.6). There is also disclosed ink cartridge containing the ink (paragraphs 18, 27, 33, 36 (lines 3-4), 65 (lines 17-18), and 79).

In light of the above, it is clear that Segawa et al. anticipate the present claims.

8. Claims 7-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Valentini et al. (U.S. 2005/0020730).

Valentini et al. disclose ink jet ink comprising water, 0.01-10% self-dispersing carbon black, 1-15% glycol ether such as dipropylene glycol mono-n-propyl ether, and 0.3-3% acrylic copolymer. It is calculated that the ratio of dipropylene glycol mono-n-propyl ether to acrylic copolymer is 0.33 (1/3) to 50 (15/0.3) (paragraphs 2-3, 14-17, 42, 43 (line 14), 44, 46, 50, 82, and 89). Although there is no explicit disclosure of ink cartridge containing the ink, Valentini et al. disclose that the ink is printed onto substrate from ink jet printer which would inherently possess ink cartridge to store the ink.

In light of the above, it is clear that Valentini et al. anticipate the present claims.

9. Claims 7-8, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Yatake (U.S. 5,746,818).

Yatake discloses ink jet ink comprising water, self-dispersing carbon black, solvent such as dipropylene glycol monopropyl ether, and polyacrylate. There is also disclosed ink chamber, i.e. ink cartridge, containing the ink (col.1, line 12, col.2, lines 20-22, col.3, lines 11-13 and 22-28, col.4, lines 16-19, col.5, line 22, col.6, lines 3-5, and col.13, lines 35-44).

In light of the above, it is clear that Yatake anticipates the present claims.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujioka (U.S. 5,667,569) in view of Ito et al. (U.S. 6,488,753).

The disclosure with respect to Fujioka in paragraph 4 above is incorporated here by reference.

The difference between Fujioka and the present claimed invention is the requirement in the claims of self-dispersing carbon black.

Ito et al., which is drawn to ink jet ink, disclose the use of self-dispersing carbon black in order to produce printed images having high density and improved image quality (col.2, lines 29-42).

In light of the motivation for using self-dispersing carbon black disclosed by Ito et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use self-dispersing carbon black as the pigment in Fujioka in order to produce printed images having high density and improved image quality, and thereby arrive at the claimed invention.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wu et al. (U.S. 2003/0144375) disclose ink jet ink comprising water, acrylic polymer, pigment; and glycol ethers.

Ohira et al. (U.S. 2004/0080594) disclose ink jet ink comprising water, glycol ethers, and self-dispersing pigment.

Kato et al. (U.S. 2004/0020407) disclose ink jet ink comprising water, self-dispersing pigment, acrylic polymer, and dipropylene glycol monobutyl ether.

Komatsu et al. (U.S. 6,379,443) disclose ink jet ink comprising water, pigment, acrylic polymer, and dipropylene glycol mono-n-propyl ether.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
7/8/05